

slp 18/04

Date: Friday, 04/04/2008 9:23:43 AM
User: Julie Lecocq

Process Sheet

| | | | |
|-----------------------|--|------------------|---------------------------|
| Customer | : CU-DAR001 Dart Helicopters Services | Drawing Name | : BK117 SKIDTUBE ASSEMBLY |
| Job Number | : 38412 | | |
| Estimate Number | : 12899 | | |
| P.O. Number | : | Part Number | : D117762011 |
| This Issue | : 04/04/2008 S.O. No. : | Drawing Number | : N/A |
| Prsht Rev. | : NC | Project Number | : N/A |
| First Issue | : / / | Drawing Revision | : A |
| Previous Run | : 38388 | Material | : |
| Written By | : | Due Date | : 18/04/2008 |
| Checked & Approved By | : <u>JD 08.04.4</u> | Qty: | 1 Um: Each |
| Comment | : Est Rev:A 07.06.11 New Issue EC Est Rev:B 08-02-22 change to revA DD verified by: | | |

POSITIVE
RECALL
01.07.03

Additional Product

Job Number:



| Seq. #: | Machine Or Operation: | Description : |
|---------|-----------------------|---------------|
|---------|-----------------------|---------------|

| | | |
|-----|----|------------------|
| 1.0 | DC | DOCUMENT CONTROL |
|-----|----|------------------|



Comment: DOCUMENT CONTROL

Photocopy bluefile & type labels per PPP-D135-751-01T CHG001

D117-762-04

01.07.03

| | | |
|-----|--------|-------------------------|
| 2.0 | 38412A | BK117 SKIDTUBE ASSEMBLY |
|-----|--------|-------------------------|



Comment: Sub-Component BK117 SKIDTUBE ASSEMBLY

Batch: 38412A

18/04/08 (1)

| | | |
|-----|-------------|-----------------------|
| 3.0 | PACKAGING 1 | PACKAGING RESOURCE #1 |
|-----|-------------|-----------------------|



Comment: PACKAGING RESOURCE #1

Pick Packing Kit

| | | |
|-----|--------|-----------|
| 4.0 | D35121 | WEARPLATE |
|-----|--------|-----------|



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

WEARPLATE

Batch: 37618

18/04/08

| | | |
|-----|------------|--------|
| 5.0 | AN968JD10C | Washer |
|-----|------------|--------|



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)

Washer

Batch: M104885

18/04/08

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
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| | | | | | | | | |

NOTE: Date & initial all entries

Friday, 04/04/2008 9:23:43 AM
Julie Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BK117 SKIDTUBE ASSEMBLY

Job Number: 38412

Part Number: D117762011

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

AN3C4A

BOLT



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)

BOLT

BATCH: M107376

7.0

AN451A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Bolt

BATCH: M106662

8.0

D2972

Bushing



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Bushing

BATCH: B14103

9.0

MS21042L4

Nut



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Nut

BATCH: M106825

10.0

QC4

INSPECT 100% KITS FOR COMPLETENESS



Comment: INSPECT 100% KITS FOR COMPLETENESS

8/4/8 (1)
S 08/07/03 (1)

11.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D135-751-011

Location:

PPP Rev:

PPDF+

12.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

POSITIVE RECALL

EFFECTIVE

AUTH

RELEASED

DATE

08/07/07

08/07/08

Job Completion

B3812 A

MF 08-07-04

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
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| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

32.9 PARTS LIST

| Item | Qty -011 | Qty -041 | Qty -043 | Qty -101 | Part Number | Description |
|------|-------------|-------------|-------------|-------------|----------------------|------------------------|
| | X | | | | D135-751-011 | SKIDTUBE INSTALLATION |
| | 1 | X | | | D135-751-041 | REPLACEMENT SKIDTUBE |
| | | | X | | D135-751-043 | WEARPLATE KIT |
| | | | | X | D135-751-101 | SKIDTUBE EXTENSION KIT |
| 1 | | 1 | | | D3507-041 | SKIDTUBE ASSEMBLY |
| 2 | 4 | | | | **BRS8-96/48SZ-M8-W2 | CLAMP |
| 3 | 8 | | | | **LN9038-08032 | SCREW |
| 4 | | 1 | | | *D2965 | CAP |
| 5 | | 1 | | | *D2965-3 | CAP |
| 6 | | 2 | | | ***AELS-1032-130 | INSERT |
| 7 | | 2 | | | ***AELS-1032-225 | INSERT |
| 8 | | 2 | | | *AN3C5A | BOLT |
| 9 | | 2 | | | *AN960C10L | WASHER |
| 10 | | 2 | | | *AN526C1032-10 | SCREW |
| 20A | | 1 | 1 | | *D3508-1 | WEARPLATE |
| 20B | | 1 | 1 | | *D3558-1 | GASKET |
| 21A | | 1 | 1 | | *D3508-3 | WEARPLATE |
| 21B | | 1 | 1 | | *D3558-3 | GASKET |
| 22A | | 1 | 1 | | *D3508-5 | WEARPLATE |
| 22B | | 1 | 1 | | *D3558-5 | GASKET |
| 23A | | 1 | 1 | | *D3508-7 | WEARPLATE |
| 23B | | 1 | 1 | | *D3558-7 | GASKET |
| 24 | | 38 | | | *AELS-1032-130 | INSERT |
| 25 | 8 | 30 | 38 | | *AN3C4A | BOLT |
| 26 | 8 | 30 | 38 | | *AN960C10L | WASHER |
| 27 | 2 | | 2 | | D3512-1 | WEARPLATE |
| 30 | | 1 | | | *AELS-1032-225 | INSERT |
| 31 | | 1 | | | *AN3C4A | BOLT |
| 32 | | 1 | | | *AN960C10L | WASHER |
| 40 | | 4 | | | *D3492-041 | PLUG ASSEMBLY |
| 41 | | 4 | | | ***NAS1611-010 | O-RING |
| 42 | | 2 | | | *D3492-047 | PLUG ASSEMBLY |
| 43 | | 2 | | | ***NAS1611-007 | O-RING |
| 44 | | 4 | | | *D3506-1 | DOUBLER |
| 45 | | 8 | | | *MS20601AD4W3 | RIVET |
| 46 | | 2 | | | *D3506-3 | DOUBLER |
| 47 | | 4 | | | *MS20601AD4W3 | RIVET |
| 48 | | 4 | | | *D3492-043 | PLUG ASSEMBLY |
| 49 | | 4 | | | ***NAS1611-013 | O-RING |
| 50 | | | | 1 | D3510-041 | INSERT ASSEMBLY |
| 51 | | | | 2 | ***AELS-1032-130 | INSERT |
| 52 | | | | 6 | ***AELS-1032-225 | INSERT |
| 53 | | | | 2 | ***ALS4-428-165 | INSERT |
| 54 | | | | 2 | AN4C7A | BOLT |
| 55 | | | | 2 | AN960C416L | WASHER |
| 56 | | | | 2 | AN3C4A | BOLT |
| 57 | | | | 8 | AN3C7A | BOLT |
| 58 | | | | 10 | AN960C10L | WASHER |

* PART IS INCLUDED WITH D3507-041 SKIDTUBE ASSEMBLY
 ** TO BE SUPPLIED BY CUSTOMER, LISTED AS REFERENCE ONLY
 *** DENOTES PART IS INCLUDED WITH ASSEMBLY ABOVE

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 WORK ORDER
 NO. 38412

5.0 PARTS LIST

5.1 D117-762-011 Skidtube Parts List

| Item | Qty -011 | Qty -041 | Part Number | Description |
|------|-------------|-------------|---------------------|--------------------------|
| | X | | D117-762-011 | SKIDTUBE INSTALLATION |
| | 1 | X | D117-762-041 | REPLACEMENT SKIDTUBE |
| 1 | | 1 | D3582-041 | SKIDTUBE ASSEMBLY |
| 2 | 2 | | **1121-51002 | SKID SHOE |
| 3 | 2 | | **1121-51102 | CLAMPING RING |
| 4 | 8 | | **LN9380M8X45 | HEXAGON BOLT |
| 5 | 8 | | **LN9023A8-1.4544.9 | LOCKING WASHER |
| 6 | 8 | | **LN9025-0815K | WASHER (OR LN9025-0815L) |
| 10 | | 1 | *D2965 | CAP |
| 11 | | 2 | ***AELS-1032-225 | INSERT |
| 12 | | 2 | *AN3C5A | BOLT |
| 13 | | 2 | *AN960C10L | WASHER |
| 20A | | 1 | *D3508-9 | WEARPLATE |
| 20B | | 1 | *D3558-9 | GASKET |
| 21A | | 1 | *D3508-3 | WEARPLATE |
| 21B | | 1 | *D3558-3 | GASKET |
| 22A | | 1 | *D3508-11 | WEARPLATE |
| 22B | | 1 | *D3558-11 | GASKET |
| 23A | | 1 | *D3508-13 | WEARPLATE |
| 23B | | 1 | *D3558-13 | GASKET |
| 24 | | 36 | *AELS-1032-130 | INSERT |
| 25 | 8 | 28 | *AN3C4A | BOLT |
| 26 | 8 | 28 | *AN960C10L | WASHER |
| 27 | 2 | | D3512-1 | WEARPLATE |
| 30 | | 2 | *AELS-1032-130 | INSERT |
| 31 | | 2 | *AN4-4A | BOLT |
| 32 | | 2 | *AN960JD416L | WASHER |
| 40 | | 2 | *D3492-049 | PLUG ASSEMBLY |
| 41 | | 2 | ***NAS1611-016 | O-RING |
| 42 | | 2 | *D3492-051 | PLUG ASSEMBLY |
| 43 | | 2 | ***NAS1611-015 | O-RING |
| 44 | | 6 | *D3492-053 | PLUG ASSEMBLY |
| 45 | | 6 | ***NAS1611-012 | O-RING |
| 50 | 2 | | AN4-51A | BOLT |
| 51 | 4 | | D2972 | BUSHING |
| 52 | 2 | | MS21042L4 | NUT (OR MS21042-4) |

* PART IS INCLUDED WITH D3582-041 SKIDTUBE ASSEMBLY

** TO BE SUPPLIED BY CUSTOMER, LISTED AS REFERENCE ONLY

*** DENOTES PART IS INCLUDED WITH ASSEMBLY ABOVE

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Revision: **A**

Date: 07.04.27

SHOP COPY
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 WITHOUT NOTICE
 WORK ORDER
 NO. 38412

Date: Friday, 04/04/2008 9:24:09 AM
 User: Julie Lecocq

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : BK117 SKIDTUBE ASSEMBLY
 Job Number : 38412A
 Estimate Number : 12898
 P.O. Number :
 This Issue : 04/04/2008 S.O. No. :
 Prsht Rev. : NC Part Number : D117762041
 First Issue : / / Type : LANDING GEAR Drawing Number : D3582 REV A
 Previous Run : 38388A Drawing Revision : A
 Material :
 Due Date : 18/04/2008 Qty: 1 Um: Each
 Written By :
 Checked & Approved By : JD 08-4-4
 Comment : Est Rev:A 07.06.11 New Issue EC
 Prototype for engineering use only (LG0005-32910)
 Est Rev:B 08-02-22 change to revA as per dwg DD verified
 by:



Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 DC DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Photocopy bluefile & type labels per PPP D117-762-041 CHG001

N/A JA

2.0 D2962150 3.540 Outer Tube, Extrut



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D2962-150

Extrusion

28672 SL 8-4-7

3.0 SKIDTUBES 1 SKIDTUBESS RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Determine square end of tube and deburr

2-Drill #30 pilot holes using DT8678. Do not open holes.

3- Deburr holes.

SL 8-4-7

4.0 BENDING BENDING MACHINE - SKIDTUBES



Comment: BENDING MACHINE

Bend tube as per program on CNC Bender and Dwg D3582. Use 5/16" locator pin on buggy "A".

8-4-8

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
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Date: Friday, 04/04/2008 9:24:09 AM
User: Julie Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BK117 SKIDTUBE ASSEMBLY

Job Number: 38412A

Part Number: D117762041

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

SKIDTUBES 1

SKIDTUBESS RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

- 1-Cut Fwd end of the tube using DT8185 *EL 8-4-8*
 - 2-Cut Aft end at VC using DT8185
 - 3-Deburr ends
 - 4-Drill Aft Cap holes using DT8678 ***DO NOT OPEN AFT CAP HOLE***
 - 5-Locate DT 8973 & Drill Ground wire hole on top of Tube.
 - 6-Install 3/16 cleco in Ground wire hole ,then drill all X-Bolt holes using 3/16" drill.
 - 7-Drill pilot holes for wearplates using DT8974
 - 8-Open wearplate holes and ground wire holes to Ø19/64" (0.297") as per Dwg D3582.
 - 9-Open Aft Cap holes using .209" drill.
 - 10-Deburr holes.
- SL 8-4-9*

6.0

D2964

Cap



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Cap

Batch:

B14101 BE 08/04/09

7.0

SKIDTUBES 1

SKIDTUBESS RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Weld fwd cap D2964 per dwg D3582 and QSI 004

A/R AL ROD

Batch:

m106330/m107263 BE 08/04/09

2-Grind flush

DP 8-4-9

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

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| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BK117 SKIDTUBE ASSEMBLY

Job Number: 38412A

Part Number: D117762041

Job Number:



| Seq. #: | Machine Or Operation: | Description : |
|---------|-----------------------|---------------|
|---------|-----------------------|---------------|

8.0

QC10

VISUAL INSPECTION OF GROUND WELDS



Comment: VISUAL INSPECTION OF GROUND WELDS

DP 08-04-09 / 2 08/04/09

9.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

5 08/04/09

10.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

DP 8-4-10

11.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

5 08/04/10

12.0

D2971

Cross Bolt Spacer



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Cross Bolt Spacer

batch B33221

BE 08/04/11

13.0

D2973

Cross Bolt Spacer



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Cross Bolt Spacer

Batch: B14636

BE 08/04/11

14.0

D36621

SPACER



Comment: Qty.: 3.0000 Each(s)/Unit Total : 3.0000 Each(s)

SPACER

batch B37189

BE 08/04/11

15.0

D36623

SPACER



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

SPACER

batch B37190

BE 08/04/11

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

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Drawing Name: BK117 SKIDTUBE ASSEMBLY

Job Number: 38412A

Part Number: D117762041

Job Number:



Seq. #:

Machine Or Operation:

Description :

16.0

D35841

WEB



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)
WEB

B38411

DP 8-4-10

17.0

SKIDTUBES 1

SKIDTUBESS RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Open X-Bolt holes to .750"(4Places) as per Dwg D3582, section B-B

2-Counter Sink X-BOLT holes as per Dwg D3582

3-Deburr and blow out chips from inside of tube.

4-Bond web as per Dwg D3582 & QSI 015

A/R 241 Sike Flex

Batch: M107397

Exp Date: 8-10-30

DP 8-4-10

5-Weld x-bolt spacers(D2973) as per Dwg D3582 section B-B.

A/R AL ROD

Batch: M107263

LE 08/04/11

6-Grind welds flush

SL 8-4-11

Tools: E

18.0

QC10

VISUAL INSPECTION OF GROUND WELDS



Comment: VISUAL INSPECTION OF GROUND WELDS

PD 08-04-11

08/04/11

19.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

7

08/04/11

20.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

PRESS WASH

BR 08-04-15

M107550

BR 08-04-15

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

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| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
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| Customer: CU-DAR001 Dart Helicopters Services | | Drawing Name: BK117 SKIDTUBE ASSEMBLY | |
| Job Number: 38412A | | Part Number: D117762041 | |
| Job Number:  | | | |
| Seq. #: | Machine Or Operation: | Description : | |
| 21.0 | QC3 | INSPECT POWDER COAT/CHEMICAL CONVERSION | |
|  | |  (1X) | |
| Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION <i>M-h</i> 08/04/16 | | | |
| 22.0 | AELS1032130 | INSERT | |
|  | |  | |
| Comment: Qty.: 36.0000 Each(s)/Unit Total : 36.0000 Each(s) Insert Batch: <i>M 165855</i> <i>M-h</i> | | | |
| 23.0 | ALS4428165 | Inserts | |
|  | |  | |
| Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s) Inserts batch <i>M 6989</i> ***same as ALS7-428-165 QSI 0017 *** <i>M-h</i> | | | |
| 24.0 | HAND FINISHING1 | HAND FINISHING RESOURCE #1 | |
|  | |  (1X) | |
| Comment: HAND FINISHING RESOURCE #1 Install Wearplate & Ground Wire inserts as per Dwg D3582. <i>M-h</i> 08/04/16 | | | |
| 25.0 | QC5 | INSPECT WORK TO CURRENT STEP | |
|  | |  08/04/16 (1) | |
| Comment: INSPECT WORK TO CURRENT STEP Inspect Inserts | | | |
| 26.0 | D2965 | Cap | |
|  | |  * | |
| Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s) Cap Batch: <i>B 38605</i> <i>M-h</i> | | | |
| 27.0 | D35083 | WEARPLATE | |
|  | |  | |
| Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s) WEARPLATE Batch: <i>B 38431</i> <i>M-h</i> 08/04/16 | | | |

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

Date: Friday, 04/04/2008 9:24:09 AM
User: Julie Lecocq

Process Sheet

| Customer: CU-DAR001 Dart Helicopters Services | | Drawing Name: BK117 SKIDTUBE ASSEMBLY | |
|--|-----------------------|---|--|
| Job Number: 38412A | | Part Number: D117762041 | |
| Job Number:  | | | |
| Seq. #: | Machine Or Operation: | Description : | |
| 28.0 | D35089 | WEARPLATE | |
|  | |  | |
| Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s) WEARPLATE Batch: <u>B 36417</u> <i>m.h</i> | | | |
| 29.0 | D350811 | WEARPLATE | |
|  | |  | |
| Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s) WEARPLATE Batch: <u>B 36415</u> <i>m.h</i> | | | |
| 30.0 | D350813 | WEARPLATE | |
|  | |  | |
| Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s) WEARPLATE Batch: <u>B 36416</u> <i>m.h</i> | | | |
| 31.0 | D35583 | GASKET | |
|  | |  | |
| Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s) GASKET Batch: <u>B 299999 B 38613</u> <i>m.h</i> | | | |
| 32.0 | D35589 | GASKET | |
|  | |  | |
| Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s) GASKET Batch: <u>B 36420</u> <i>m.h</i> | | | |
| 33.0 | D355811 | GASKET | |
|  | |  | |
| Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s) GASKET Batch: <u>B 36419</u> <i>m.h</i> | | | |
| 34.0 | D355813 | GASKET | |
|  | |  (X) | |
| Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s) GASKET Batch: <u>B 36418</u> <i>m.h</i> 08/04/16 | | | |

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

Date: Friday, 04/04/2008 9:24:09 AM
User: Julie Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BK117 SKIDTUBE ASSEMBLY

Job Number: 38412A

Part Number: D117762041

Job Number:



| Seq. #: | Machine Or Operation: | Description : |
|---------|-----------------------|---------------|
|---------|-----------------------|---------------|

| | | |
|------|--------|------|
| 35.0 | AN3C4A | BOLT |
|------|--------|------|



Comment: Qty.: 28.0000 Each(s)/Unit Total : 28.0000 Each(s)

BOLT

Batch:

M 107376

m-h

| | | |
|------|--------|------|
| 36.0 | AN3C5A | Bolt |
|------|--------|------|



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Bolt

Batch:

M106780

m-h

| | | |
|------|-------|------|
| 37.0 | AN44A | Bolt |
|------|-------|------|



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Bolt

batch

M101291

m-h

| | | |
|------|-----------|--------|
| 38.0 | AN960C10L | washer |
|------|-----------|--------|



Comment: Qty.: 28.0000 Each(s)/Unit Total : 28.0000 Each(s)

washer

Batch:

M107376

m-h

| | | |
|------|------------|--------|
| 39.0 | AN960JD10L | Washer |
|------|------------|--------|



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Washer

batch

M104885

m-h

| | | |
|------|-------------|--------|
| 40.0 | AN960JD416L | Washer |
|------|-------------|--------|



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Washer

batch

M107008

m-h

| | | |
|------|----------|---------------|
| 41.0 | D3492049 | PLUG ASSEMBLY |
|------|----------|---------------|



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

PLUG ASSEMBLY

batch

B 37288

m-h

08/04/16

(IX)

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

Date: Friday, 04/04/2008 9:24:09 AM
User: Julie Lecocq

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BK117 SKIDTUBE ASSEMBLY

Job Number: 38412A

Part Number: D117762041

Job Number:



Seq. #:

Machine Or Operation:

Description :

42.0

D3492051

PLUG ASSEMBLY



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)

PLUG ASSEMBLY

batch

B37289

M.L.

43.0

D3492053

PLUG ASSEMBLY



Comment: Qty.: 6.0000 Each(s)/Unit Total: 6.0000 Each(s)

PLUG ASSEMBLY

batch

B37290

(IX)

B37474

(SX)

M.L.

44.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

1-Inspect for Foreign objects

2-Install Aft cap as per Dwg D3582, Detail "C"

A/R 241 Sika Flex Batch:

Exp Date:

M107397

08/10

3-Install Wearplates as per Dwg D3582,

Note:Install Bolt and washer on Ground Wire inserts on top of tube see section D-D of dwg D3582

*****Do not install bolts where indicated on Dwg(Note #6)*****

A/R 241 Sika Flex Batch:

Exp Date:

M107397

08/10

M.L.

08/04/17

4- Wing Walk as per Dwg D3043 and QSI 0054.4

M106894

M.L.

08/04/17

(IX)

45.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

08/04/17 (IX)

01.07.07

46.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D117-762-041

Location:

PPP Rev:

APP 38412

C-1113 (C)

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____




QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

Date: Friday, 04/04/2008 9:24:09 AM
User: Julie Lecocq

Process Sheet

| | | | |
|---|-----------------------|---|-----------------------------|
| Customer: CU-DAR001 Dart Helicopters Services | | Drawing Name: BK117 SKIDTUBE ASSEMBLY | |
| Job Number: 38412A | | Part Number: D117762041 | |
| Job Number: | |  | |
| Seq. #: | Machine Or Operation: | Description : | |
| 47.0 | QC21 | FINAL INSPECTION/W/O RELEASE | |
|  | |  | 08/07/08 <i>[Signature]</i> |
| Comment: FINAL INSPECTION/W/O RELEASE | | | |

Job Completion



POSITIVE RECALL
EFFECTIVE 08/07/08 AUTH h
RELEASED PE DATE 08.07.08

MF 08-07-08

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

32.9 PARTS LIST

| Item | Qty -011 | Qty -041 | Qty -043 | Qty -101 | Part Number | Description |
|------|-------------|-------------|-------------|-------------|----------------------|------------------------|
| | X | | | | D135-751-011 | SKIDTUBE INSTALLATION |
| | 1 | X | | | D135-751-041 | REPLACEMENT SKIDTUBE |
| | | | X | | D135-751-043 | WEARPLATE KIT |
| | | | | X | D135-751-101 | SKIDTUBE EXTENSION KIT |
| 1 | | 1 | | | D3507-041 | SKIDTUBE ASSEMBLY |
| 2 | 4 | | | | **BRS8-96/48SZ-M8-W2 | CLAMP |
| 3 | 8 | | | | **LN9038-08032 | SCREW |
| 4 | | 1 | | | *D2965 | CAP |
| 5 | | 1 | | | *D2965-3 | CAP |
| 6 | | 2 | | | ***AELS-1032-130 | INSERT |
| 7 | | 2 | | | ***AELS-1032-225 | INSERT |
| 8 | | 2 | | | *AN3C5A | BOLT |
| 9 | | 2 | | | *AN960C10L | WASHER |
| 10 | | 2 | | | *AN526C1032-10 | SCREW |
| 20A | | 1 | 1 | | *D3508-1 | WEARPLATE |
| 20B | | 1 | 1 | | *D3558-1 | GASKET |
| 21A | | 1 | 1 | | *D3508-3 | WEARPLATE |
| 21B | | 1 | 1 | | *D3558-3 | GASKET |
| 22A | | 1 | 1 | | *D3508-5 | WEARPLATE |
| 22B | | 1 | 1 | | *D3558-5 | GASKET |
| 23A | | 1 | 1 | | *D3508-7 | WEARPLATE |
| 23B | | 1 | 1 | | *D3558-7 | GASKET |
| 24 | | 38 | | | *AELS-1032-130 | INSERT |
| 25 | 8 | 30 | 38 | | *AN3C4A | BOLT |
| 26 | 8 | 30 | 38 | | *AN960C10L | WASHER |
| 27 | 2 | | 2 | | D3512-1 | WEARPLATE |
| 30 | | 1 | | | *AELS-1032-225 | INSERT |
| 31 | | 1 | | | *AN3C4A | BOLT |
| 32 | | 1 | | | *AN960C10L | WASHER |
| 40 | | 4 | | | *D3492-041 | PLUG ASSEMBLY |
| 41 | | 4 | | | ***NAS1611-010 | O-RING |
| 42 | | 2 | | | *D3492-047 | PLUG ASSEMBLY |
| 43 | | 2 | | | ***NAS1611-007 | O-RING |
| 44 | | 4 | | | *D3506-1 | DOUBLER |
| 45 | | 8 | | | *MS20601AD4W3 | RIVET |
| 46 | | 2 | | | *D3506-3 | DOUBLER |
| 47 | | 4 | | | *MS20601AD4W3 | RIVET |
| 48 | | 4 | | | *D3492-043 | PLUG ASSEMBLY |
| 49 | | 4 | | | ***NAS1611-013 | O-RING |
| 50 | | | | 1 | D3510-041 | INSERT ASSEMBLY |
| 51 | | | | 2 | ***AELS-1032-130 | INSERT |
| 52 | | | | 6 | ***AELS-1032-225 | INSERT |
| 53 | | | | 2 | ***ALS4-428-165 | INSERT |
| 54 | | | | 2 | AN4C7A | BOLT |
| 55 | | | | 2 | AN960C416L | WASHER |
| 56 | | | | 2 | AN3C4A | BOLT |
| 57 | | | | 8 | AN3C7A | BOLT |
| 58 | | | | 10 | AN960C10L | WASHER |

* PART IS INCLUDED WITH D3507-041 SKIDTUBE ASSEMBLY
 ** TO BE SUPPLIED BY CUSTOMER, LISTED AS REFERENCE ONLY
 *** DENOTES PART IS INCLUDED WITH ASSEMBLY ABOVE

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 NO. 384127

PARTS LIST FOR D3582-041 SKIDTUBE ASSEMBLY

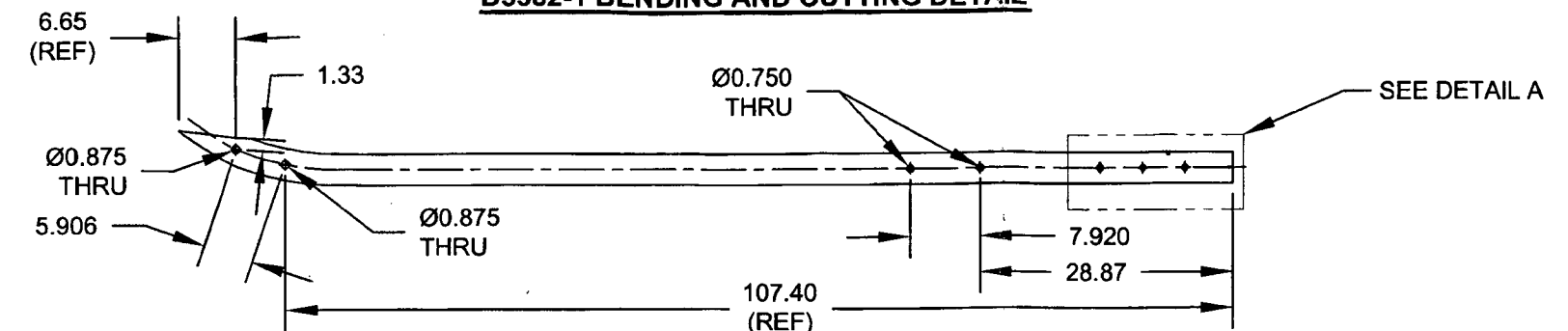
| Qty | Part Number | Description |
|-----|---------------|-------------------|
| X | D3582-041 | SKIDTUBE ASSEMBLY |
| 1 | D2962-150 | EXTRUSION |
| 1 | D2964 | CAP |
| 1 | D2965 | CAP |
| 1 | D2971 | CROSS BOLT SPACER |
| 2 | D2973 | CROSS BOLT SPACER |
| 2 | D3492-049 | PLUG ASSEMBLY |
| 2 | D3492-051 | PLUG ASSEMBLY |
| 6 | D3492-053 | PLUG ASSEMBLY |
| 1 | D3508-3 | WEARPLATE |
| 1 | D3508-9 | WEARPLATE |
| 1 | D3508-11 | WEARPLATE |
| 1 | D3508-13 | WEARPLATE |
| 1 | D3558-3 | GASKET |
| 1 | D3558-9 | GASKET |
| 1 | D3558-11 | GASKET |
| 1 | D3558-13 | GASKET |
| 1 | D3584-1 | WEB |
| 3 | D3662-1 | CROSS BOLT SPACER |
| 1 | D3662-3 | CROSS BOLT SPACER |
| 36 | AELS-1032-130 | INSERT |
| 2 | ALS7-428-165 | INSERT |
| 28 | AN3C4A | BOLT |
| 2 | AN3-5A | BOLT |
| 2 | AN4-4A | BOLT |
| 28 | AN960C10L | WASHER |
| 2 | AN960JD10L | WASHER |
| 2 | AN960JD416L | WASHER |

GENERAL NOTES:

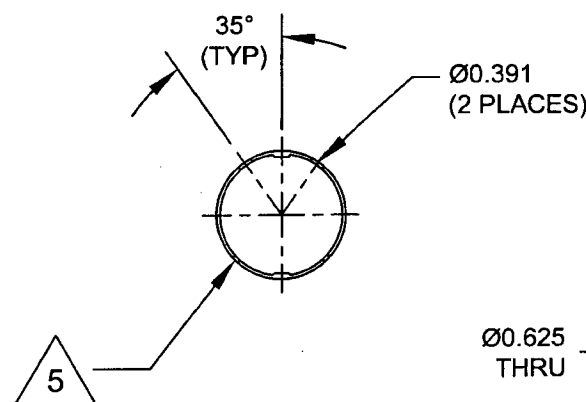
- ALL DIMENSIONS ARE IN INCHES
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- WELDING TO BE DONE PER DART QSI 004.
- INSERT D3584-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015 AFTER BENDING.
- USE DART DRILL TEMPLATE DT8900 TO LOCATE AND DRILL Ø0.297 HOLES (36 PLACES) FOR WEARSHOE INSERTS. INSTALL AELS-1032-130 PER SECTION G-G (36 PLACES) AFTER FINISH. SEAL WEARPLATE BOLTS WITH SIKAFLEX-241/-291.
- DO NOT INSTALL AN3C4A BOLTS AND AN960C10L WASHERS IN INDICATED LOCATIONS.
- FINISH:
 - CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSERTING D3584-1 WEB.
 - POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3.
 - ANTI-SKID PAINT AS INDICATED TO 1.00 ABOVE CENTER LINE PER DART QSI 005 4.4



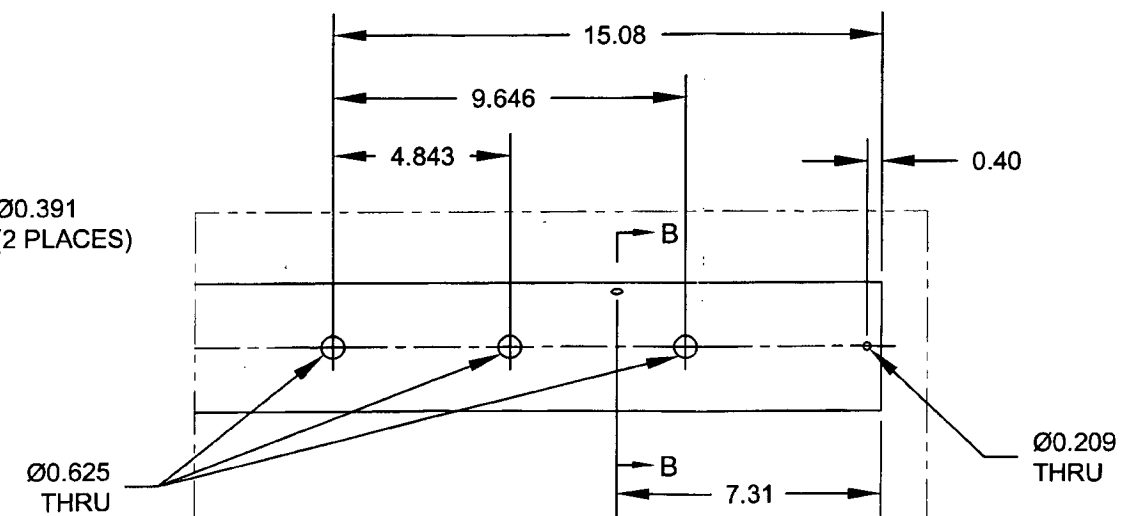
D3582-1 BENDING AND CUTTING DETAIL



D3582-1 DRILLING DETAIL



SECTION B-B
SCALE 1:5

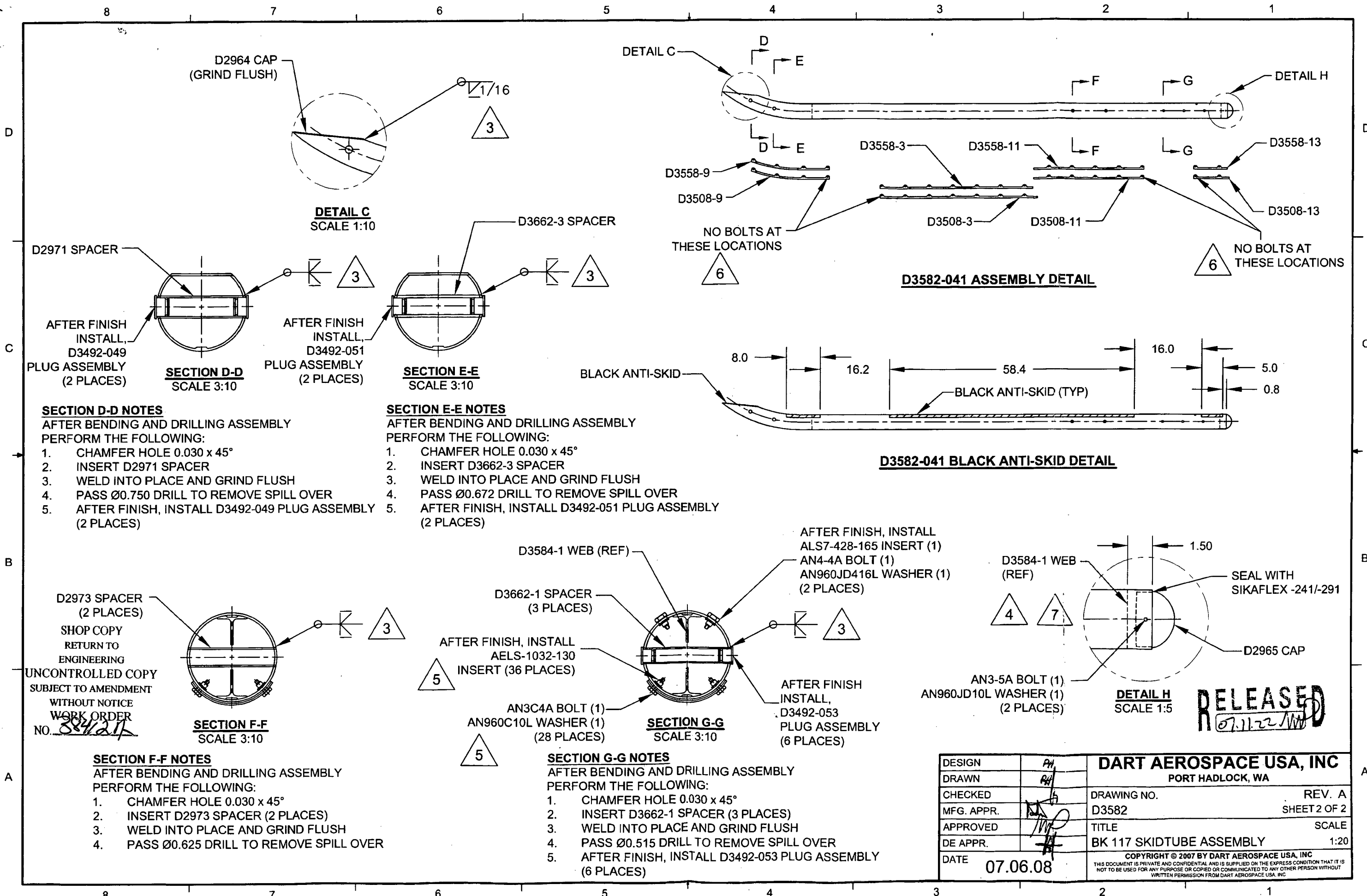


DETAIL A
SCALE 1:5

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07.11.22

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| | | | |
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| A | NEW ISSUE | PH | 07.06.08 |
| REV. | DESCRIPTION | BY | DATE |
| DESIGN | PH | DART AEROSPACE USA, INC PORT HADLOCK, WA | |
| DRAWN | PH | | |
| CHECKED | PH | DRAWING NO. | REV. A |
| MFG. APPR. | PH | D3582 | SHEET 1 OF 2 |
| APPROVED | PH | TITLE | SCALE |
| DE APPR. | PH | BK 117 SKIDTUBE ASSEMBLY | 1:20 |
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SECTION D-D NOTES

AFTER BENDING AND DRILLING ASSEMBLY PERFORM THE FOLLOWING:

1. CHAMFER HOLE 0.030 x 45°
2. INSERT D2971 SPACER
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.750 DRILL TO REMOVE SPILL OVER
5. AFTER FINISH, INSTALL D3492-049 PLUG ASSEMBLY (2 PLACES)

SECTION E-E NOTES

AFTER BENDING AND DRILLING ASSEMBLY PERFORM THE FOLLOWING:

1. CHAMFER HOLE 0.030 x 45°
2. INSERT D3662-3 SPACER
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.672 DRILL TO REMOVE SPILL OVER
5. AFTER FINISH, INSTALL D3492-051 PLUG ASSEMBLY (2 PLACES)

SECTION F-F NOTES

AFTER BENDING AND DRILLING ASSEMBLY PERFORM THE FOLLOWING:

1. CHAMFER HOLE 0.030 x 45°
2. INSERT D2973 SPACER (2 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.625 DRILL TO REMOVE SPILL OVER

SECTION G-G NOTES

AFTER BENDING AND DRILLING ASSEMBLY PERFORM THE FOLLOWING:

1. CHAMFER HOLE 0.030 x 45°
2. INSERT D3662-1 SPACER (3 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.515 DRILL TO REMOVE SPILL OVER
5. AFTER FINISH, INSTALL D3492-053 PLUG ASSEMBLY (6 PLACES)

| | | | |
|------------|----------|---|--------------|
| DESIGN | PH | DART AEROSPACE USA, INC | |
| DRAWN | PH | PORT HADLOCK, WA | |
| CHECKED | h | DRAWING NO. | REV. A |
| MFG. APPR. | h | D3582 | SHEET 2 OF 2 |
| APPROVED | h | TITLE | SCALE |
| DE APPR. | h | BK 117 SKIDTUBE ASSEMBLY | 1:20 |
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NO. 148

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliot
Job number: 38344A
Part number: D17 762 O1
Description: Skid tube BK117
Welding Process: Tig[☒] Mig[☐]
Base material: Aluminium
Current: AC[☒] DC[☐]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[☐]
Penetration: pass[☒] fail[☐]

UNACCEPTABLE

Cracks: pass[☒] fail[☐]
Undercut: pass[☒] fail[☐]
Pin holes: pass[☒] fail[☐]
Overlap (cold lap): pass[☒] fail[☐]
Porosity (surface): pass[☒] fail[☐]
Coloration: pass[☒] fail[☐]

Qualifier Pd. Duval Date of Test Coupon 08-04-14

Welder Barclay Elliot Date of Test Coupon 08-04-14

The above named individual is qualified in accordance with AWS D17.1.2001 to weld